What is claimed is:

 A yield monitor for a forage processing machinery, comprising:

a cross auger supported by at least one force measuring device, said at least one force measuring device generates a force signal substantially related to a forage mass flow rate;

- 2. The yield monitor of claim 1, wherein said forage processing machinery intake parameters comprise a cut width and a cutterhead speed.
- 3. The yield monitor of claim 1, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 4. The yield monitor of claim 1, wherein said force measuring device comprises a pressure transducer.

- 5. The yield monitor of claim 1, wherein said force measuring device comprises a load cell.
- 6. The yield monitor of claim 1, wherein said force measuring device comprises a strain gauge.
- 7. The yield monitor of claim 1, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 8. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal due to a forage stream impinging on a cross auger and at least one force measuring device; and

- 9. The method of claim 8, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 10. The method of claim 8, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 11. A yield monitor for a forage processing machinery, comprising:

a spinner communicating with at least one force measuring device, said at least one force measuring device generating a force signal in response to a force on said spinner due to impingement by a forage stream, said force signal being substantially related to a forage mass flow rate;

- 12. The yield monitor of claim 11, wherein said forage processing machinery intake parameters comprise a cut width and a cutterhead speed.
- 13. The yield monitor of claim 11, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 14. The yield monitor of claim 11, wherein said force measuring device comprises a pressure transducer.
- 15. The yield monitor of claim 11, wherein said force measuring device comprises a load cell.
- 16. The yield monitor of claim 11, wherein said force measuring device comprises a strain gauge.
- 17. The yield monitor of claim 11, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

- 18. The yield monitor of claim 11, wherein said spinner is powered.
- 19. The yield monitor of claim 11, wherein said at least one force measuring device is positioned vertically below said spinner and supports said spinner.
- 20. The yield monitor of claim 11, wherein said at least one force measuring device is positioned horizontally adjacent to said spinner and said spinner communicates a force to said at least one force measuring device when a forage stream impinges on said spinner.
- 21. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal due to a forage stream impinging on a spinner, said force signal being generated by at least one force measuring device communicating with said spinner; and

- 22. The method of claim 21, wherein said force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 23. The method of claim 21, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 24. A yield monitor for a forage processing machinery, comprising:

a deflector shield affixed to at least one force
measuring device, with said deflector shield being positioned
below a cutter head of a forage harvester to guide a forage
stream leaving said cutter head, said forage stream impinging
on said deflector shield and said at least one force measuring
device, with said at least one force measuring device
generating a force signal substantially related to a forage
mass flow rate;

- 25. The yield monitor of claim 24, wherein said forage processing machinery intake parameters comprise a cut width and a cutterhead speed.
- 26. The yield monitor of claim 24, wherein said deflector shield is hinged to said forage processing machinery.
- 27. The yield monitor of claim 24, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 28. The yield monitor of claim 24, wherein said force measuring device comprises a pressure transducer.
- 29. The yield monitor of claim 24, wherein said force measuring device comprises a load cell.
- 30. The yield monitor of claim 24, wherein said force measuring device comprises a strain gauge.

- 31. The yield monitor of claim 24, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 32. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal due to a forage stream impinging on a deflector shield and an associated at least one force measuring device positioned below a cutter head of a forage harvester;

- 33. The method of claim 32, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 34. The method of claim 32, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

a transition stage within said forage processing
machinery, said transition stage having a wide proximal
opening and a narrow distal opening, with said distal opening
gathering and channeling a forage stream flowing therethrough,
said transition stage including at least one hinged side panel
communicating a forage stream impingement force to an
associated at least one force measuring device, with said at
least one force measuring device generating a force signal
substantially related to a forage mass flow rate;

- 36. The yield monitor of claim 35, wherein said forage processing machinery intake parameters comprise a cut width and a cutterhead speed.
- 37. The yield monitor of claim 35, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.

- 38. The yield monitor of claim 35, wherein said force measuring device comprises a pressure transducer.
- 39. The yield monitor of claim 35, wherein said force measuring device comprises a load cell.
- 40. The yield monitor of claim 35, wherein said force measuring device comprises a strain gauge.
- 41. The yield monitor of claim 35, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 42. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal due to a forage stream impinging force on a transition stage side panel, said side panel communicating said forage stream impinging force to an associated at least one force measuring device;

- 43. The method of claim 42, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 44. The method of claim 42, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

a blower having a blower chamber and a blower spout extending substantially vertically away from said blower chamber, said blower spout including a blower spout bend wherein said blower spout curves from a substantially vertical orientation to a substantially horizontal orientation, with a force measuring device and an associated impingement plate being located in said blower, said force measuring device generating a force signal substantially related to a forage mass flow rate;

- 46. The yield monitor of claim 45, wherein said forage processing machinery intake parameters comprise a cut width, a blower speed, and a cutterhead speed.
- 47. The yield monitor of claim 45, wherein said impingement plate is located in said blower chamber.
- 48. The yield monitor of claim 45, wherein said impingement plate is located in said blower spout bend.

- 49. The yield monitor of claim 45, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 50. The yield monitor of claim 45, wherein said force measuring device comprises a pressure transducer.
- 51. The yield monitor of claim 45, wherein said force measuring device comprises a load cell.
- 52. The yield monitor of claim 45, wherein said force measuring device comprises a strain gauge.
- 53. The yield monitor of claim 45, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

54. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal substantially related to an impinging force of a forage stream, said force signal being generated by an impingement plate and an associated force measuring device positioned in a blower spout; and

- 55. The method of claim 54, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 56. The method of claim 54, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

a roller and at least one associated force measuring device, said at least one associated force measuring device measuring a separation force imparted on said roller by a forage stream and generating a force signal substantially related to a forage mass flow rate; and

- 58. The yield monitor of claim 57, wherein said forage processing machinery intake parameters comprise a cut width and a roller speed.
- 59. The yield monitor of claim 57, wherein said roller comprises a conditioner roller.
- 60. The yield monitor of claim 57, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.

- 61. The yield monitor of claim 57, wherein said force measuring device comprises a pressure transducer.
- 62. The yield monitor of claim 57, wherein said force measuring device comprises a load cell.
- 63. The yield monitor of claim 57, wherein said force measuring device comprises a strain gauge.
- 64. The yield monitor of claim 57, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 65. The yield monitor of claim 57, wherein said force measuring device measures a separation force imparted on a roller by a biasing device.

66. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal of a separation force imparted on a roller in a forage processing machinery, said separation force signal being substantially related to a forage mass flow rate; and

- 67. The method of claim 66, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 68. The method of claim 66, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

an upper roller of a pair of rollers;

an ultrasonic displacement measuring device that measures a displacement of said upper roller, with said ultrasonic displacement measuring device generating a displacement signal substantially related to a forage mass flow rate and without contacting said upper roller; and

a computer receiving said displacement signal and generating a yield amount based upon said displacement signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

- 70. The yield monitor of claim 69, wherein said forage processing machinery intake parameters comprise a cut width and a roller speed.
- 71. The yield monitor of claim 69, wherein said upper roller comprises an upper conditioner roller.
- 72. The yield monitor of claim 69, wherein said upper roller comprises an upper feed roller.

- 73. The yield monitor of claim 69, wherein said force measuring device generates a substantially instantaneous displacement signal and said computer generates a substantially instantaneous mass flow rate.
- 74. The yield monitor of claim 69, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 75. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a displacement signal of a displacement of a roller in a forage processing machinery, said displacement signal being generated by an ultrasonic displacement measuring device and being substantially related to a forage mass flow rate; and

- 76. The method of claim 75, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 77. The method of claim 75, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 78. A yield monitor for a forage processing machinery, comprising:

an impeller hood extending over an impeller, said hood being hinged to said forage processing machinery and communicating a forage stream impingement force to an associated at least one force measuring device, with said at least one force measuring device generating a force signal substantially related to a forage mass flow rate;

- 79. The yield monitor of claim 78, wherein said forage processing machinery intake parameters comprise a cut width, a hood position, and an impeller speed.
- 80. The yield monitor of claim 78, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 81. The yield monitor of claim 78, wherein said force measuring device comprises a pressure transducer.
- 82. The yield monitor of claim 78, wherein said force measuring device comprises a load cell.
- 83. The yield monitor of claim 78, wherein said force measuring device comprises a strain gauge.
- 84. The yield monitor of claim 78, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

85. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal due to a forage stream impinging force on an impeller hood, said impeller hood communicating said forage stream impinging force to an associated at least one force measuring device;

- 86. The method of claim 85, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 87. The method of claim 85, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

a swath shield communicating a forage stream impingement force to an associated at least one force measuring device, said at least one force measuring device measuring an impinging force on said swath shield and generating a force signal substantially related to a forage mass flow rate;

- 89. The yield monitor of claim 88, wherein said forage processing machinery intake parameters comprise a cut width, a cutting angle, a machine angle, an angle of incidence of said swath shield, and a roller/impeller speed.
- 90. The yield monitor of claim 88, wherein said swath shield is capable of being angularly positioned.
- 91. The yield monitor of claim 88, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.

- 92. The yield monitor of claim 88, wherein said force measuring device comprises a pressure transducer.
- 93. The yield monitor of claim 88, wherein said force measuring device comprises a load cell.
- 94. The yield monitor of claim 88, wherein said force measuring device comprises a strain gauge.
- 95. The yield monitor of claim 88, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 96. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a force signal substantially related to an impinging force of a forage stream impinging on a swath shield; and

- 97. The method of claim 96, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.
- 98. The method of claim 96, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 99. A yield monitor for a forage processing machinery, comprising:

a drive load measuring device affixed to a drive device of said forage processing machinery, said drive load measuring device generating a drive load signal related to a forage mass flow rate; and

a computer receiving said drive load signal;

wherein said computer is capable of generating a yield amount based upon said drive load signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

- 100. The yield monitor of claim 99, wherein said forage processing machinery intake parameters comprise a cut width and a roller or impeller speed.
- 101. The yield monitor of claim 99, wherein said drive device comprises a hydraulic motor and said drive load measuring device comprises:
- a hydraulic pressure transducer located in a hydraulic pressure supply line communicating with said hydraulic motor; and
- a rotational speed sensor capable of measuring a rotational speed of said hydraulic motor.
- 102. The yield monitor of claim 99, wherein said drive device comprises at least two pulleys and an idler pulley, and said drive load measuring device comprises a load cell providing a tensioning force to said idler pulley.
- 103. The yield monitor of claim 99, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

- 104. The yield monitor of claim 99, wherein said drive device powers a cutting platform.
- 105. The yield monitor of claim 99, wherein said drive device powers a conditioner roller.
- 106. The yield monitor of claim 99, wherein said drive device powers a feed roller.
- 107. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a drive load signal related to a mass flow rate of a forage stream feeding into said forage processing machinery; and

generating a yield amount based upon said drive load signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

108. The method of claim 107, wherein said step of generating a drive load signal further includes the steps of:

measuring a hydraulic pressure in a hydraulic pressure supply line communicating with a hydraulic motor; and measuring a rotational speed of said hydraulic motor.

- 109. The method of claim 107, wherein said step of generating a drive load signal further includes measuring a tensioning force in an idler pulley of said forage processing machinery.
- 110. A yield monitor for a forage processing machinery, comprising:

a blower having a blower chamber and a blower spout extending substantially vertically away from said blower chamber, said blower spout including a blower spout bend wherein said blower spout curves from a substantially vertical orientation to a substantially horizontal orientation, with a forage stream distance measuring device being located in said blower spout after said blower spout bend, said forage stream distance measuring device generating a distance signal substantially related to a forage mass flow rate; and

a computer that receives said distance signal and generates a yield amount based upon said distance signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

111. The yield monitor of claim 110, wherein said forage processing machinery intake parameters comprise a cut width, a spout position, and a blower speed.

- 112. The yield monitor of claim 110, wherein said force measuring device generates a substantially instantaneous force signal and said computer generates a substantially instantaneous mass flow rate.
- 113. The yield monitor of claim 110, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 114. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a distance signal substantially related to a distance to a forage stream in a blower spout, said distance signal being generated by an ultrasonic distance sensor positioned in said blower spout; and

generating a yield amount based upon said distance signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

115. The method of claim 114, wherein said impinging force signal comprises a substantially instantaneous force signal and said method generates a substantially instantaneous mass flow rate.

- 116. The method of claim 114, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 117. A yield monitor for a forage accumulating machinery, comprising:

a volume increment accumulation measuring device generating a volume increment accumulation signal substantially related to a forage mass; and

a computer that receives said volume increment accumulation signal and generates yield amount based upon said accumulation signal, a forage processing machinery groundspeed, and said forage accumulating machinery groundspeed.

- 118. The yield monitor of claim 117, wherein said forage processing machinery intake parameters comprise a cut width, a bale cross-section, and a bale chamber density/pressure.
- 119. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler.

- 120. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a bale travel sensor.
- 121. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a measuring wheel that rotates in response to a movement of a forming bale.
- 122. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a force measuring device capable of measuring a force applied to a baler compression plunger.
- 123. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a hydraulic pressure measuring device that measures a hydraulic pressure, with said hydraulic pressure being used to drive a baler compression plunger.

- 124. The yield monitor of claim 117, wherein said forage accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a force measuring device capable of measuring a force applied to a baler compression plunger, and wherein said computer uses an average force level in said force measuring device to generate said yield amount.
- accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a force measuring device capable of measuring a force applied to a baler compression plunger, and wherein said computer uses a time interval between force pulses in said force measuring device to generate said yield amount.
- accumulating machinery comprises a square baler and wherein said volume increment accumulation measuring device comprises a force measuring device capable of measuring a force applied to a baler compression plunger, and wherein said computer uses a compression plunger force pulse width in said force measuring device to generate said yield amount.

- 127. The yield monitor of claim 117, wherein said yield monitor generates a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.
- 128. A method for measuring a forage yield in a forage processing machinery, comprising the steps of:

generating a forage volume increment accumulation movement signal substantially related to a movement of an accumulated forage stream accumulating in said forage processing machinery; and

generating a yield amount based upon said forage volume increment accumulation movement signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

- 129. The method of claim 128, wherein said forage volume increment accumulation movement signal is generated by a bale travel sensor.
- 130. The method of claim 128, wherein said forage volume increment accumulation movement signal is generated by measuring a rotation amount of a measuring wheel that rotates in response to a movement of said accumulated forage stream.

- 131. The method of claim 128, wherein said yield amount is generated by measuring a force applied to a baler compression plunger.
- 132. The method of claim 128, wherein said yield amount is generated by measuring an average force level applied to a baler compression plunger.
- 133. The method of claim 128, wherein said yield amount is generated by measuring a compression plunger force pulse width within said forage accumulation movement signal.
- 134. The method of claim 128, wherein said method further includes a step of generating a groundspeed control signal from said yield amount, with said groundspeed control signal capable of being used by said forage processing machinery to control a forage processing machinery groundspeed.

135. A computer-implemented method for providing a yield feedback to a forage processing machinery, comprising the steps of:

determining in a first computer a forage mass flow rate through said forage processing machinery;

receiving in said first computer a groundspeed measurement of a forage processing machinery groundspeed;

calculating in said first computer a yield amount based upon said mass flow rate and said groundspeed measurement;

generating in said first computer a groundspeed control signal from said yield amount; and

controlling said foraging processing machinery groundspeed with a second computer to substantially equal said groundspeed control signal.

- 136. The method of claim 135, wherein said first and second computers are a same computer.
- 137. The method of claim 135, wherein said method further includes the step of controlling a roller gap clearance in a mower conditioner.
- 138. The method of claim 135, wherein said method further includes the step of controlling a roller separation force in a mower conditioner.

- 139. The method of claim 135, wherein said method further includes the step of controlling a roller speed in a mower conditioner.
- 140. The method of claim 135, wherein said method further includes the step of controlling a hood clearance in a mower conditioner.
- 141. The method of claim 135, wherein said method further includes the step of controlling an impeller speed in a mower conditioner.
- 142. The method of claim 135, wherein said method further includes the step of controlling a reel speed in a mower conditioner.
- 143. The method of claim 135, wherein said method further includes the step of controlling a windrow forming shield position in a mower conditioner.
- 144. The method of claim 135, wherein said method further includes the step of controlling a cutterhead speed in a forage harvester.

- 145. The method of claim 135, wherein said method further includes the step of controlling a cutter bar clearance in a forage harvester.
- 146. The method of claim 135, wherein said method further includes the step of controlling a blower speed in a forage harvester.